

Proposal for short course
On
Basic Insights of Reservoir Engineering
Centre for Advanced Studies, AKTU (Lucknow)
Department of Nanotechnology

Course Name: Basic Insights of Reservoir Engineering

Course Duration: 25 Hours

Course Description:

This short-term course is designed to provide a dense understanding of the practical methods used in reservoir engineering for maximizing the ultimate hydrocarbon recovery. The course covers all aspects related to Reservoir Engineering during all reservoir life cycle, starting from the primary recovery and up to the enhanced oil recovery.

Course Objective:

The main objective of this short-term course is to understand the optimization of field in term of optimum profit and the estimation of the potential size of the reservoir in order to determine how much oil and gas is available, identify, and define individual reservoirs and its physical properties, deduce each reservoir's performance and consider all important economic factors.

Course Outcome:

The objective of this short-term course will be able to:

- Understand the fundamental and application of Reservoir Engineering
- Have a better knowledge on reservoir fluid and the rock properties
- Learn how to calculate the original hydrocarbon in place
- Understand production optimization concept and application
- Understand reservoir surveillance and monitoring

Who can Attend?

The Faculty, students, & research scholar related to the Petroleum Engineering and Petroleum Geology.

Lecture Plan:

Day 1

- ❖ Introduction to the Reservoir Engineering Fundamentals
- ❖ Reservoir Fluid Properties
- ❖ Phase Behavior of the Reservoir fluid

Day 2

- ❖ Reservoir Rock Properties
 - Porosity, Saturation, Surface & Interfacial Tension
 - Wettability and Relative Permeability
 - Capillary Pressure, Imbibition and Drainage
 - Hysteresis

Day 3

- ❖ Reservoir Drive Mechanisms
- ❖ Reservoir Life Cycle

Day 4

- ❖ Original Oil in Place Determination
 - Volumetric Method
 - Material Balance
 - Decline Curve Analysis

Day 5

- ❖ Well Testing
 - Well Test Objective
 - Define Test Input/output Data
 - Type of Well Tests
 - Diffusivity Equation
 - Derivative Analysis

End Session and Discussion